

## Muons in lutetium aluminum oxide (2) ( $\text{Lu}_3\text{Al}_5\text{O}_{12}$ )

$\langle Z/A \rangle$	$\rho$ [g/cm <sup>3</sup> ]	$I$ [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
0.43907	6.730	365.9	0.18578	3.0000	0.2000	3.0000	4.9994	0.00
$T$	$p$ [MeV/c]	Ionization	Brems	Pair prod [MeV cm <sup>2</sup> /g]	Photonucl	Total	CSDA range [g/cm <sup>2</sup> ]	
10.0 MeV	$4.704 \times 10^1$	5.008				5.009	$1.125 \times 10^0$	
14.0 MeV	$5.616 \times 10^1$	3.944				3.944	$2.034 \times 10^0$	
20.0 MeV	$6.802 \times 10^1$	3.109				3.109	$3.766 \times 10^0$	
30.0 MeV	$8.509 \times 10^1$	2.434				2.434	$7.450 \times 10^0$	
40.0 MeV	$1.003 \times 10^2$	2.091				2.092	$1.191 \times 10^1$	
80.0 MeV	$1.527 \times 10^2$	1.593				1.593	$3.450 \times 10^1$	
100. MeV	$1.764 \times 10^2$	1.504				1.505	$4.745 \times 10^1$	
140. MeV	$2.218 \times 10^2$	1.417				1.418	$7.496 \times 10^1$	
200. MeV	$2.868 \times 10^2$	1.374				1.374	$1.181 \times 10^2$	
256. MeV	$3.462 \times 10^2$	1.366			0.000	1.367	<i>Minimum ionization</i>	
300. MeV	$3.917 \times 10^2$	1.369	0.000		0.000	1.369	$1.912 \times 10^2$	
400. MeV	$4.945 \times 10^2$	1.386	0.000		0.000	1.387	$2.638 \times 10^2$	
800. MeV	$8.995 \times 10^2$	1.469	0.001		0.000	1.470	$5.437 \times 10^2$	
1.00 GeV	$1.101 \times 10^3$	1.502	0.001		0.000	1.503	$6.782 \times 10^2$	
1.40 GeV	$1.502 \times 10^3$	1.555	0.002	0.000	0.001	1.557	$9.394 \times 10^2$	
2.00 GeV	$2.103 \times 10^3$	1.612	0.003	0.001	0.001	1.616	$1.317 \times 10^3$	
3.00 GeV	$3.104 \times 10^3$	1.676	0.004	0.002	0.001	1.684	$1.922 \times 10^3$	
4.00 GeV	$4.104 \times 10^3$	1.720	0.006	0.004	0.002	1.733	$2.507 \times 10^3$	
8.00 GeV	$8.105 \times 10^3$	1.819	0.016	0.014	0.003	1.853	$4.732 \times 10^3$	
10.0 GeV	$1.011 \times 10^4$	1.849	0.021	0.020	0.004	1.894	$5.799 \times 10^3$	
14.0 GeV	$1.411 \times 10^4$	1.891	0.032	0.033	0.006	1.962	$7.872 \times 10^3$	
20.0 GeV	$2.011 \times 10^4$	1.933	0.049	0.054	0.008	2.046	$1.086 \times 10^4$	
30.0 GeV	$3.011 \times 10^4$	1.978	0.081	0.095	0.012	2.167	$1.561 \times 10^4$	
40.0 GeV	$4.011 \times 10^4$	2.008	0.114	0.140	0.015	2.278	$2.011 \times 10^4$	
80.0 GeV	$8.011 \times 10^4$	2.075	0.259	0.338	0.030	2.703	$3.620 \times 10^4$	
100. GeV	$1.001 \times 10^5$	2.096	0.335	0.445	0.037	2.914	$4.333 \times 10^4$	
140. GeV	$1.401 \times 10^5$	2.126	0.492	0.665	0.052	3.336	$5.615 \times 10^4$	
200. GeV	$2.001 \times 10^5$	2.158	0.738	1.013	0.074	3.985	$7.259 \times 10^4$	
234. GeV	$2.340 \times 10^5$	2.173	0.878	1.208	0.086	4.346	<i>Muon critical energy</i>	
300. GeV	$3.001 \times 10^5$	2.195	1.157	1.597	0.111	5.061	$9.482 \times 10^4$	
400. GeV	$4.001 \times 10^5$	2.221	1.591	2.201	0.148	6.161	$1.127 \times 10^5$	
800. GeV	$8.001 \times 10^5$	2.284	3.382	4.682	0.299	10.647	$1.615 \times 10^5$	
1.00 TeV	$1.000 \times 10^6$	2.304	4.302	5.953	0.375	12.934	$1.785 \times 10^5$	
1.40 TeV	$1.400 \times 10^6$	2.335	6.146	8.485	0.532	17.499	$2.050 \times 10^5$	
2.00 TeV	$2.000 \times 10^6$	2.369	8.967	12.351	0.769	24.456	$2.339 \times 10^5$	
3.00 TeV	$3.000 \times 10^6$	2.407	13.676	18.775	1.177	36.036	$2.674 \times 10^5$	
4.00 TeV	$4.000 \times 10^6$	2.435	18.449	25.269	1.591	47.744	$2.914 \times 10^5$	
8.00 TeV	$8.000 \times 10^6$	2.503	37.691	51.375	3.309	94.879	$3.497 \times 10^5$	
10.0 TeV	$1.000 \times 10^7$	2.525	47.388	64.498	4.192	118.605	$3.685 \times 10^5$	
14.0 TeV	$1.400 \times 10^7$	2.559	66.730	90.681	6.006	165.978	$3.969 \times 10^5$	
20.0 TeV	$2.000 \times 10^7$	2.596	95.916	130.125	8.788	237.427	$4.270 \times 10^5$	
30.0 TeV	$3.000 \times 10^7$	2.639	144.499	195.754	13.602	356.495	$4.611 \times 10^5$	
40.0 TeV	$4.000 \times 10^7$	2.669	193.257	261.542	18.532	476.002	$4.853 \times 10^5$	
80.0 TeV	$8.000 \times 10^7$	2.745	388.581	524.877	39.147	955.352	$5.435 \times 10^5$	
100. TeV	$1.000 \times 10^8$	2.770	486.410	656.666	49.805	1195.651	$5.621 \times 10^5$	